论文

认知无线电中基于信息简约的最大似然协同频谱感知算法

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摘要
该文针对控制带宽受限条件下认知用户的协同频谱感知问题，提出了基于信息简约的最大似然协同频谱感知算法。算法使用信息简约模块来降低本地感知信息传递需要的网络开销，在基站处使用基于最大似然准则的检测来提高感知性能。理论分析和仿真表明，该算法能够以较少的网络开销有效提高频谱感知性能，特别是在认知用户接收信噪比相差较大的情况下，其性能优势更为明显。

关键词　认知无线电　频谱感知　协同　信息简约

分类号　TN92

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Maximum Likelihood Cooperative Spectrum Sensing Algorithm Based on Contracted Information in Cognitive Radio Systems

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Abstract
To solve the cooperative spectrum sensing problem under constrained control bandwidth in cognitive radio systems, the maximum likelihood cooperative spectrum sensing algorithm based on contracted information is developed in this paper. The contracted information module is used to reduce the network overhead, and the detection based on the Maximum Likelihood (ML) criterion is used to enhance the spectrum sensing performance in the base station. The theoretic analysis and simulation results show that the proposed algorithm can efficaciously improve the spectrum sensing performance with lesser network overhead, especially in the case of the lager discrepancy between the received signal-to-noises of cognitive users.

Key words　Cognitive radio　Spectrum sensing　Cooperation　Contracted information

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